

FARM MANAGEMENT

MARKETING AND FARM BUSINESS MANAGEMENT

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Date: March, 2005

Guidelines For Estimating **Swine Farrow-Wean to 5 kg Costs** Based On 600 Sows 13,119 Pigs Sold

This publication is intended to provide a format and a set of guidelines for determining the cost of production for a swine farrow to 5kg enterprise. This operation is intended to represent the first stage of a three stage system. Adjustments will be necessary when applying these figures to your enterprise.

The assumptions on which the costs are based are outlined in the supporting pages. These assumptions were arrived at using the breeding stock, management practices, and facilities seen in modern, well managed swine operations of comparable size in Manitoba. Productivity and performance assumptions are based on information collected by department specialists, feed companies and other organizations. Where individual herd productivity and performance levels differ from those listed, adjustments will be required.

Accurate, up to date, production and financial records are essential for the effective application of these guidelines to an individual operation. Without such information accurate cost of production projections cannot be determined.

The guideline can be useful for comparison purposes. Comparison of costs at different levels of production can be made with other farms, the farm over a period of time or comparing the plan with the actual results at the end of the planning period.

Disclaimer: This budget is only a guide and is not intended as an in depth study of the cost of production of this industry. Interpretation and utilization of this information is the responsibility of the user. If you require assistance with developing your individual budget, please contact your local MAFRI office.



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Farrow-Wean to 5 kg Pig Cost of Production

The following farrow wean to 5 kg cost of production budget is **based on the assumption that all feed is purchased.**

The budget also includes a land investment cost based on the assumption that 160 acres would be required for this size of operation, with 140 acres being rented out at \$25 per acre.

The rations illustrated in this budget are examples only. Individual farm conditions should be taken into account when formulating the diets. Producers need to know what the feed intakes of their animals are. Please consult with a nutritionist for diet formulation suggestions.

The Manitoba pork production industry profile is changing and this budget was specifically designed to address the need of producers who may want to analyze the cost of starting up or switching to a farrow wean 5 kg operation. Several companies are offering contracts with varying levels of guarantees. Producers need to accurately calculate their costs before they can properly make a decision.

600 Sow Farrow-Wean to 5kg Cost of Production Summary
March, 2005

	<u>\$/Pig Sold</u>	<u>\$/Sow</u>	<u>Total Cost</u>	<u>Your Cost</u>
A. Operating Costs				
1. Feed Costs:				
1.01 Sow Lactation Ration	\$2.45	\$53.58	\$32,142	
1.02 Sow Gestation Ration	\$7.19	\$157.25	\$94,326	
1.03 Boar Ration	\$0.40	\$8.75	\$5,248	
1.04 Creep Feed	<u>\$1.78</u>	<u>\$38.93</u>	<u>\$23,352</u>	
Total Feed Cost	\$11.82	\$258.51	\$155,068	
2. Other Operating Costs:				
2.01 Veterinary Medicine & Supplies:	\$1.34	\$29.31	\$17,579	
2.02 Maintenance & Repairs	\$0.34	\$7.44	\$4,460	
2.03 Hydro & Propane	\$2.55	\$55.76	\$33,450	
2.04 Insurance	\$1.38	\$30.12	\$18,066	
2.05 Manure Costs	\$1.23	\$26.85	\$16,107	
2.06 Office Supplies	\$0.09	\$2.00	\$1,200	
2.07 Marketing & Transport.	\$1.69	\$36.96	\$22,171	
2.08 Sow Replacement	\$3.64	\$79.61	\$47,753	
2.09 Boar Replacement	\$0.99	\$21.63	\$12,972	
2.10 Property Tax	<u>\$0.34</u>	<u>\$7.50</u>	<u>\$4,500</u>	
Subtotal Operating Costs	\$25.41	\$555.69	\$333,326	
2.11 Interest on Operating Costs	<u>\$0.32</u>	<u>\$7.09</u>	<u>\$4,256</u>	
Total Operating Costs	\$25.73	\$562.78	\$337,582	
B. Fixed Costs				
3. Depreciation:				
3.01 Buildings & Manure Storage	\$1.69	\$36.96	\$22,171	
3.02 Equipment	<u>\$2.63</u>	<u>\$57.52</u>	<u>\$34,503</u>	
Total Depreciation Cost	\$4.32	\$94.48	\$56,674	
4. Investment:				
4.01 Land Cost	\$0.12	\$2.67	\$1,600	
4.02 Buildings & Manure Storage	\$0.81	\$17.62	\$10,567	
4.03 Equipment	\$0.64	\$14.08	\$8,449	
4.04 Breeding Herd	<u>\$0.73</u>	<u>\$16.00</u>	<u>\$9,600</u>	
Total Investment Cost	\$2.30	\$50.37	\$30,216	
Total Fixed Costs	\$6.62	\$144.85	\$86,890	
C. Labour				
Wages, benefits and hired manager	\$10.26	\$224.39	\$134,601	
Total Cost of Production	\$42.62	\$932.02	\$559,073	
Break-Even Price	<u>\$/Pig</u>			
Operating Cost	\$25.73			
Operating & Labour Cost	\$35.99			
Operating, Labour & Fixed Cost	<u>\$42.62</u>			

Disclaimer: This budget is only a guide and is not intended as an in depth study of the cost of production of this industry. Interpretation and utilization of this information is the responsibility of the user.

Farrow to 5 kg Pig Production Costs

1. This input table outlines the production assumptions used.
2. Buildings and equipment are valued at new cost.
3. Manure haulage is contracted out.
4. Gilts are purchased for herd replacement.

Indicators of Productivity

Sows	600
Boars	30
Litters/Sow/Year	2.35
Average Weaning Age (days)	20
Average Born Alive per Litter	10.90
Percent Pre-Weaning Mortality	12.0
Percent Post-Weaning Culls	3.0

Herd Profile	<u>Total</u>	<u>/Sow</u>	<u>/Litter</u>	<u>%Mortality</u>
Sows	600			
Boars	30			
Litters	1,410	2.35		
Pigs Born Alive	15,369	25.62	10.90	
Pigs Died, Pre-Weaning	1,844	3.07	1.31	12.0
Pigs Weaned	13,525	22.54	9.59	
Pigs Culled	406	0.68	0.29	3.0
Weaner Pigs Sold	13,119	21.87	9.30	

Feed Requirements and Costs

		<u>Purchased</u>	<u>Home-Mixed</u>
Sow Gestation Ration	2.3 kg/day	\$190.00	\$0.00
Sow Lactation Ration	6.0 kg/day	\$215.00	\$0.00
Boar Ration	2.5 kg/day	\$190.00	\$0.00
Creep Feed	1.0 kg/pig	\$1,520.00	\$0.00

Labour

Total Hours per 7-day week	185.0	hours/week
Wage (includes benefits & hired manager)	\$14.00	/hour

Sow Barn Capital Investment

	<u>Sq.Ft. ¹</u>	<u>\$/Sq.Ft.</u>	<u>Total</u>	<u>/Sow</u>	<u>Your Cost</u>
Buildings					
Gestation	16,200	\$17.10	\$277,020	\$461.70	
Farrowing	6,200	\$19.45	\$120,594	\$200.99	
Office & Loading	200	\$25.00	\$5,000	\$8.33	
Standby Generator			\$25,000	\$41.67	
Feed Mill (building only)			\$0	\$0.00	
Total Building Cost			\$427,614	\$712.69	
Equipment ¹					
Gestation		\$15.25	\$247,050	\$411.75	
Farrowing		\$20.00	\$124,004	\$206.67	
Fire Alarm System			\$3,000	\$5.00	
Feed Bins (4 bins)			\$10,000	\$16.67	
Feed Mill (equipment only)			\$0	\$0.00	
Total Equipment Cost			\$384,054	\$640.09	
Total Buildings and Equipment Cost			\$811,668	\$1,352.78	
Breeding Stock					
Value of Replacement Sow	\$350	/sow	\$210,000	\$350.00	
Value of Replacement Boar	\$1,000	/boar	\$30,000	\$50.00	
Total Breeding Stock Cost			\$240,000	\$400.00	
Land Value					
Land Investment	20 acres @	\$500	\$10,000	\$16.67	
Other Costs					
Site Preparation			\$30,000	\$50.00	
Manure Storage			\$28,000	\$46.67	
Total Other Costs			\$58,000	\$96.67	
Total Capital Investment			\$1,119,668	\$1,866.11	

¹ FOOTNOTE: The number of square feet allocated for buildings and equipment are approximations.

Cost per sow for buildings and equipment will vary around the province.

FOOTNOTE: 1 sq.ft. = 0.0929 sq.m; 1 sq.m. = 10.764 sq.ft.; 1 ft. = 0.3048 m

Feed Ingredient Costs

Ingredients	<u>Price/tonne</u>	<u>Your Cost</u>
Wheat	\$110	_____
Barley	\$110	_____
Corn	\$117	_____
Soybean Meal	\$270	_____
Canola Meal	\$165	_____
Peas	\$100	_____
Creep Premix	\$850	_____
Sow Micro Premix	\$3,000	_____
Grower Micro Premix	\$2,500	_____
Canola Oil	\$900	_____
Whey Powder	\$800	_____
Herring Meal	\$1,500	_____
Plasma	\$7,500	_____
Limestone	\$80	_____
Dical (16% Ca-21% P)	\$455	_____
Salt - 96%	\$125	_____
Phytase	\$11,000	_____
L-Lysine HCL	\$2,500	_____
L-Threonine	\$4,800	_____
DL-Methionine	\$4,500	_____
Oats - Steam rolled	\$400	_____
Processing Cost		_____
(Hydro,repairs/maintenance & insurance)	\$3.25	_____
Percent Weight loss due to processing	1.25 %	_____
Labour Cost	\$4.00	_____

Ration Formulas	Dry Sow (kg)	Nursing Sow (kg)	Boar Ration (kg)	Creep Ration (kg)
Wheat	259.00	568.70	233.64	0.00
Barley	539.00	200.00	539.00	0.00
Corn	0.00	0.00	0.00	139.75
Soybean Meal	0.00	196.00	0.00	116.59
Canola Meal	80.00	0.00	102.00	0.00
Peas	91.00	0.00	91.00	0.00
Creep Premix	0.00	0.00	0.00	0.00
Sow Micro Premix	5.00	5.00	5.00	5.00
Grower Micro Premix	0.00	0.00	0.00	0.00
Canola Oil	0.00	0.00	0.00	20.00
Whey Powder	0.00	0.00	0.00	100.00
Herring Meal	0.00	0.00	0.00	60.00
Plasma	0.00	0.00	0.00	58.00
Limestone	10.00	12.00	12.00	12.23
Dical (16% Ca-21% P)	11.00	12.00	12.00	9.43
Salt - 96%	3.50	5.00	3.50	3.50
Phytase	0.50	0.50	0.50	0.00
L-Lysine HCL	1.00	0.80	1.36	0.50
L-Threonine	0.00	0.00	0.00	0.00
DL-Methionine	0.00	0.00	0.00	0.00
Oats - Steam rolled	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>475.00</u>
TOTAL (kg)	1,000.00	1,000.00	1,000.00	1,000.00

Feed Requirement and Cost Summary

	Amount	Ingredient Price	Ration Cost	Your Cost
	(kg)	(\$ /tonne)	(\$ /tonne)	
Sow Gestation & Boar Ration:				
Wheat	259.0	\$110.00	\$28.49	
Barley	539.0	\$110.00	\$59.29	
Canola Meal	80.0	\$165.00	\$13.20	
Peas	91.0	\$100.00	\$9.10	
Sow Micro Premix	5.0	\$3,000.00	\$15.00	
Limestone	10.0	\$80.00	\$0.80	
Dical (16% Ca-21% P)	11.0	\$455.00	\$5.01	
Salt - 96%	3.5	\$125.00	\$0.44	
Phytase	0.5	\$11,000.00	\$5.50	
L-Lysine HCL	1.0	\$2,500.00	\$2.50	
Total Dry Sow	1,000.0 kg		\$139.33	
Adjusted For Weight Loss		1.25 %	\$141.07	
Plus Processing Cost		\$3.25	\$144.32	
Plus Labour Cost		\$4.00	\$148.32	
 Sow Lactation:				
Wheat	568.7	\$110.00	\$62.56	
Barley	568.7	\$110.00	\$62.56	
Soybean Meal	200.0	\$110.00	\$22.00	
Sow Micro Premix	196.0	\$270.00	\$52.92	
Limestone	5.0	\$3,000.00	\$15.00	
Dical (16% Ca-21% P)	12.0	\$80.00	\$0.96	
Salt - 96%	12.0	\$455.00	\$5.46	
Phytase	5.0	\$125.00	\$0.63	
L-Lysine HCL	0.5	\$11,000.00	\$5.50	
	0.8	\$2,500.00	\$2.00	
Total Nursing Sow	1,000.0 kg		\$167.03	
Adjusted For Weight Loss		1.25 %	\$169.12	
Plus Processing Cost		\$3.25	\$172.37	
Plus Labour Cost		\$4.00	\$176.37	

Creep Ration:

Corn	139.8	\$117.00	\$16.35	
Soybean Meal	116.6	\$270.00	\$31.48	
Sow Micro Premix	5.0	\$3,000.00	\$15.00	
Canola Oil	20.0	\$900.00	\$18.00	
Whey Powder	100.0	\$800.00	\$80.00	
Herring Meal	60.0	\$1,500.00	\$90.00	
Plasma	58.0	\$7,500.00	\$435.00	
Limestone	12.2	\$80.00	\$0.98	
Dical (16% Ca-21% P)	9.4	\$455.00	\$4.29	
Salt - 96%	3.5	\$125.00	\$0.44	
L-Lysine HCL	0.5	\$2,500.00	\$1.25	
Oats - Steam rolled	<u>475.0</u>	\$400.00	<u>\$190.00</u>	
Total Creep	1,000.0 kg		\$882.79	
Adjusted For Weight Loss		1.25 %	\$883.02	
Plus Processing Cost		\$3.25	<u>\$886.27</u>	
Plus Labour Cost		\$4.00	\$890.27	

Production Cost Worksheet

A. Operating Costs

Your Cost

1. Feed Requirements and Costs

1.01 Sow Lactation Ration

	20	days average weaning age	_____
x	2.35	litters/sow/year	_____
=	47.0	days lactation	_____
x	6.0	kg ration/day	_____
x	\$190.00	/tonne ration	_____
÷	1,000	kg/tonne	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$2.45	/pig sold	_____

1.02 Sow Gestation Ration

	365	days/year	_____
-	47.0	days lactation	_____
=	318.0	days gestation	_____
x	2.3	kg ration/day	_____
x	\$215.00	/tonne ration	_____
÷	1,000	kg/tonne	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$7.19	/pig sold	_____

1.03 Boar Ration

	365	days	_____
x	2.5	kg ration/day	_____
x	\$190.00	/tonne ration	_____
÷	1,000	kg/tonne	_____
x	30	boars	_____
÷	600	sows	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$0.40	/pig sold	_____

1.04 Creep Feed

	1.0	kg ration/pig	_____
x	\$1,520.00	/tonne of creep feed	_____
÷	1,000	kg/tonne	_____
x	25.62	pigs born alive/sow/year	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$1.78	/pig sold	_____

2. Other Operating Costs**2.01 Veterinary Medicine & Supplies**

	\$7.25	/sow professional services	_____
+	\$22.00	/sow medication	_____
÷	<u>21.87</u>	pigs/sow	_____
=	\$1.34	/pig sold	_____

2.02 Maintenance & Repairs

	\$1,352.78	/sow building & equipment cost	_____
x	0.55	% repair & maintenance	_____
÷	<u>21.87</u>	pigs/sow	_____
=	\$0.34	/pig sold	_____

2.03 Hydro & Propane

	\$10,000	hydro	_____
+	\$23,450	propane	_____
÷	<u>13,119</u>	pigs marketed	_____
=	\$2.55	/pig sold	_____

2.04 Insurance

	\$811,668	buildings & equipment	_____
x	\$0.78	/\$100 capital	_____
÷	100		_____
÷	<u>13,119</u>	pigs marketed	_____
=	\$0.48	/pig sold	_____
	\$240,000	breeding stock	_____
+	\$459,165	weaners	_____
x	\$0.88	/\$100 capital	_____
÷	<u>13,119</u>	pigs marketed	_____
=	\$0.47	/pig sold	_____
	\$1,200	business interruption coverage/sow	_____
x	600	sows	_____
x	\$0.78	/\$100 capital invested	_____
÷	<u>13,119</u>	pigs sold	_____
=	\$0.43	/pig sold	_____
=	\$1.38	/pig sold	_____

2.05 Manure Costs

Haulage	18.0	litres/sow/day	_____
x	\$0.003	/litre	_____
x	365	days	_____
÷	<u>21.87</u>	pigs/sow	_____
=	\$0.90	/pig sold	_____

Odour control	\$4,300	total costs	_____
$\div$	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$0.33	/pig sold	_____

Total	=	\$1.23	/pig sold	_____
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2.06 Office Supplies

x	\$2.00	\$/sow	_____
$\div$	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$0.09	/pig sold	_____

2.07 Marketing & Transportation & Board Levy

	\$1.00	marketing & transportation	_____
$\pm$	<u>\$0.69</u>	<u>board levy</u>	_____
=	\$1.69	/pig sold	_____

2.08 Sow Replacement

	180.0	kg/sow (cull weight)	_____
x	\$84.00	/100 kg live	_____
=	\$151.20	/sow value of cull	_____
	\$350.00	/sow value of replacement	_____
-	\$151.20	/sow value of cull	_____
=	\$198.80	net replacement cost	_____
x	40.00	% sow culling rate	_____
$\div$	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$3.64	/pig sold	_____

2.09 Boar Replacement

	225.0	kg/boar (cull weight)	_____
x	\$60.00	/100 kg live	_____
=	\$135.00	/boar value of cull	_____
	\$1,000.00	/boar value of replacement	_____
-	\$135.00	/boar value of cull	_____
=	\$865.00	net replacement cost	_____
x	50.00	% boar culling rate	_____
x	30	number of boars	_____
$\div$	600	number of sows	_____
$\div$	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$0.99	/pig sold	_____

	\$4,500	total taxes	
÷	13,119	pigs marketed	
=	\$0.34	/pig sold	

<u>Subtotal Operating Cost x Farrow-to-Farrow Period x</u>		<u>% Interest</u>
	365	2
	365	days per year
÷	2.35	litters/sow
=	155	days farrow-to-farrow
	\$25.41	subtotal operating
x	155	days farrow to farrow
÷	365	days per year
x	6.0	% operating interest rate
÷	2	average
=	\$0.32	/pig sold

B. Fixed Costs**3. Depreciation:** Original Cost - Salvage Value
Useful Life**3.01 Buildings**

	\$485,614	building cost (including earthen manure storage)	_____
-	\$42,761	salvage value (building only)	_____
÷	20	years useful life	_____
÷	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$1.69	/pig sold	_____

3.02 Equipment

	\$384,054	equipment cost	_____
-	\$38,405	salvage value	_____
÷	10	years useful life	_____
÷	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$2.63	/pig sold	_____

4. Investment:

$$\frac{(\text{Original Cost} + \text{Salvage Value})}{2} \times \text{Investment Rate}$$

4.01 Land Cost

	\$10,000	land investment	_____
+	\$30,000	site preparation	_____
x	4.0	% investment rate	_____
÷	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$0.12	/pig sold	_____

4.02 Buildings

	\$485,614	building cost (including earthen manure storage)	_____
+	\$42,761	salvage value (building only)	_____
÷	2	average	_____
x	4.0	% investment rate	_____
÷	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$0.81	/pig sold	_____

4.03 Equipment

	\$384,054	equipment cost	_____
+	\$38,405	salvage value	_____
÷	2	average	_____
x	4.0	% investment rate	_____
÷	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$0.64	/pig sold	_____

4.04 Breeding Stock

	\$240,000	value of breeding stock	_____
x	4.0	% investment rate	_____
÷	<u>13,119</u>	<u>pigs marketed</u>	_____
=	\$0.73	/pig sold	_____

C. Labour

	185.0	hours/week	_____
x	52	weeks/year	_____
x	\$14.00	/hour	_____
÷	600	sows	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$10.26	/pig sold	_____

Summary of Purchased Feeds Used

Number of Sows	600			
Total Pigs Fed	13,525			
	Total	Total	Total	Total
	per Year	per Month	per Pig	per Pig
	(tonnes)	(tonnes)	(kgs)	(lbs)
Dry Sow	438.84	36.57	32.45	71.53
Lactating Sow	169.20	14.10	12.51	27.58
Boar	27.38	2.28	2.02	4.46
Creep	13.53	1.13	1.00	2.20
Total	648.94	54.08	47.98	105.78

Summary of Home Feed Ingredients Used

	Total	Total	Total	Total
	per Year	per Month	per Pig	per Pig
	(tonnes)	(tonnes)	(kgs)	(lbs)
Wheat	0.00	0.00	0.00	0.00
Barley	0.00	0.00	0.00	0.00
Corn	0.00	0.00	0.00	0.00
Soybean Meal	0.00	0.00	0.00	0.00
Canola Meal	0.00	0.00	0.00	0.00
Peas	0.00	0.00	0.00	0.00
Creep Premix	0.00	0.00	0.00	0.00
Sow Micro Premix	0.00	0.00	0.00	0.00
Grower Micro Premix	0.00	0.00	0.00	0.00
Canola Oil	0.00	0.00	0.00	0.00
Whey Powder	0.00	0.00	0.00	0.00
Herring Meal	0.00	0.00	0.00	0.00
Plasma	0.00	0.00	0.00	0.00
Limestone	0.00	0.00	0.00	0.00
Dical (16% Ca-21% I	0.00	0.00	0.00	0.00
Salt - 96%	0.00	0.00	0.00	0.00
Phytase	0.00	0.00	0.00	0.00
L-Lysine HCL	0.00	0.00	0.00	0.00
L-Threonine	0.00	0.00	0.00	0.00
DL-Methionine	0.00	0.00	0.00	0.00
Oats - Steam rolled	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00
Total	648.94	54.08	47.98	105.78

For further information contact your local MAFRI office.

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